Surveillance and Broadcast Services

Alaska Industry Council

Jere Hayslett, SBS WSA Manager

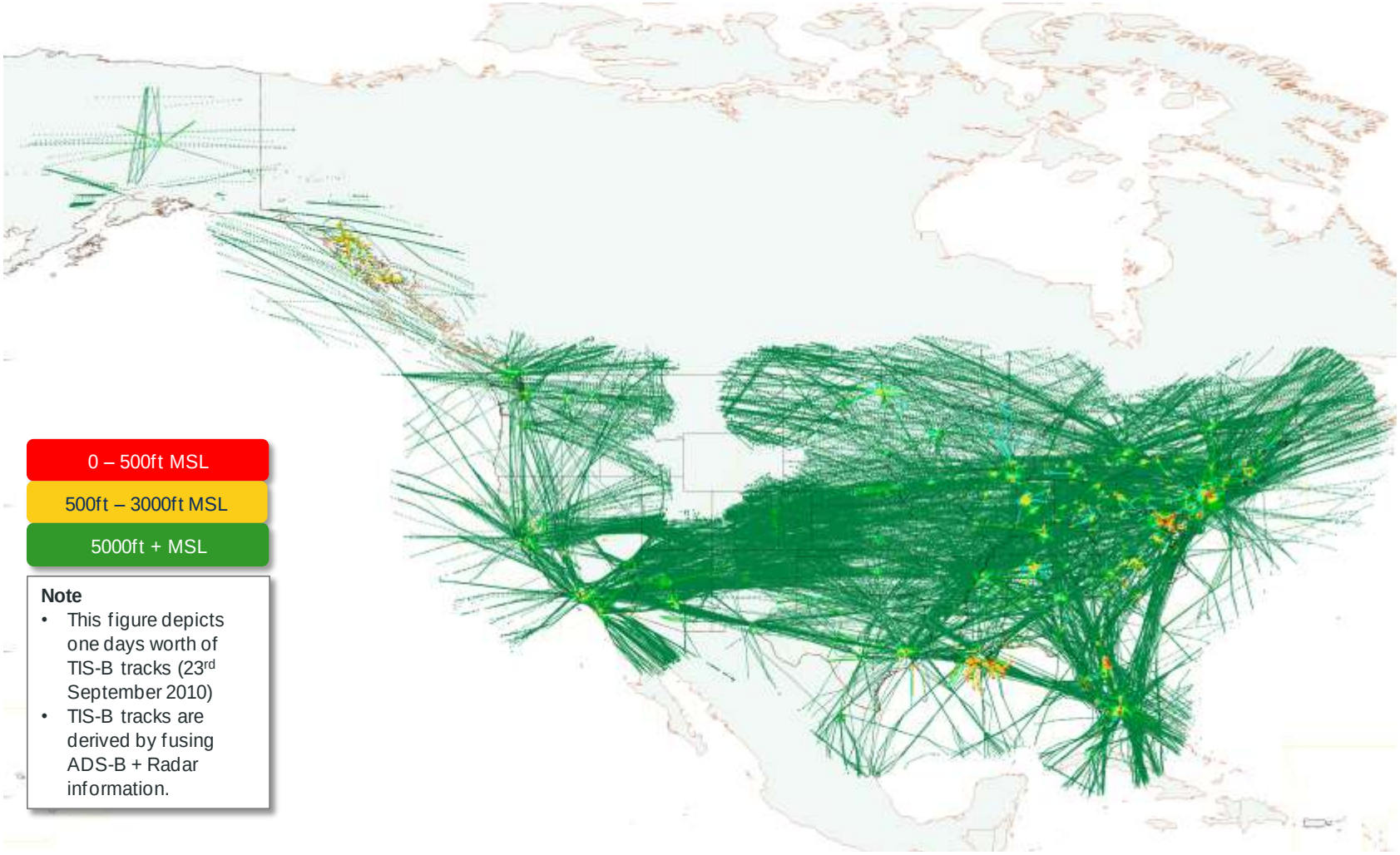
Date: February 9, 2011

Federal Aviation Administration

Agenda

- **SBS WSA Update *(Jere Hayslett)***
- **Update on the Galaxy 15 WAAS satellite *(JoAnn Ford)***
- **100LL AV Gas *(August Asay)***

Current ADS-B System Coverage



0 – 500ft MSL

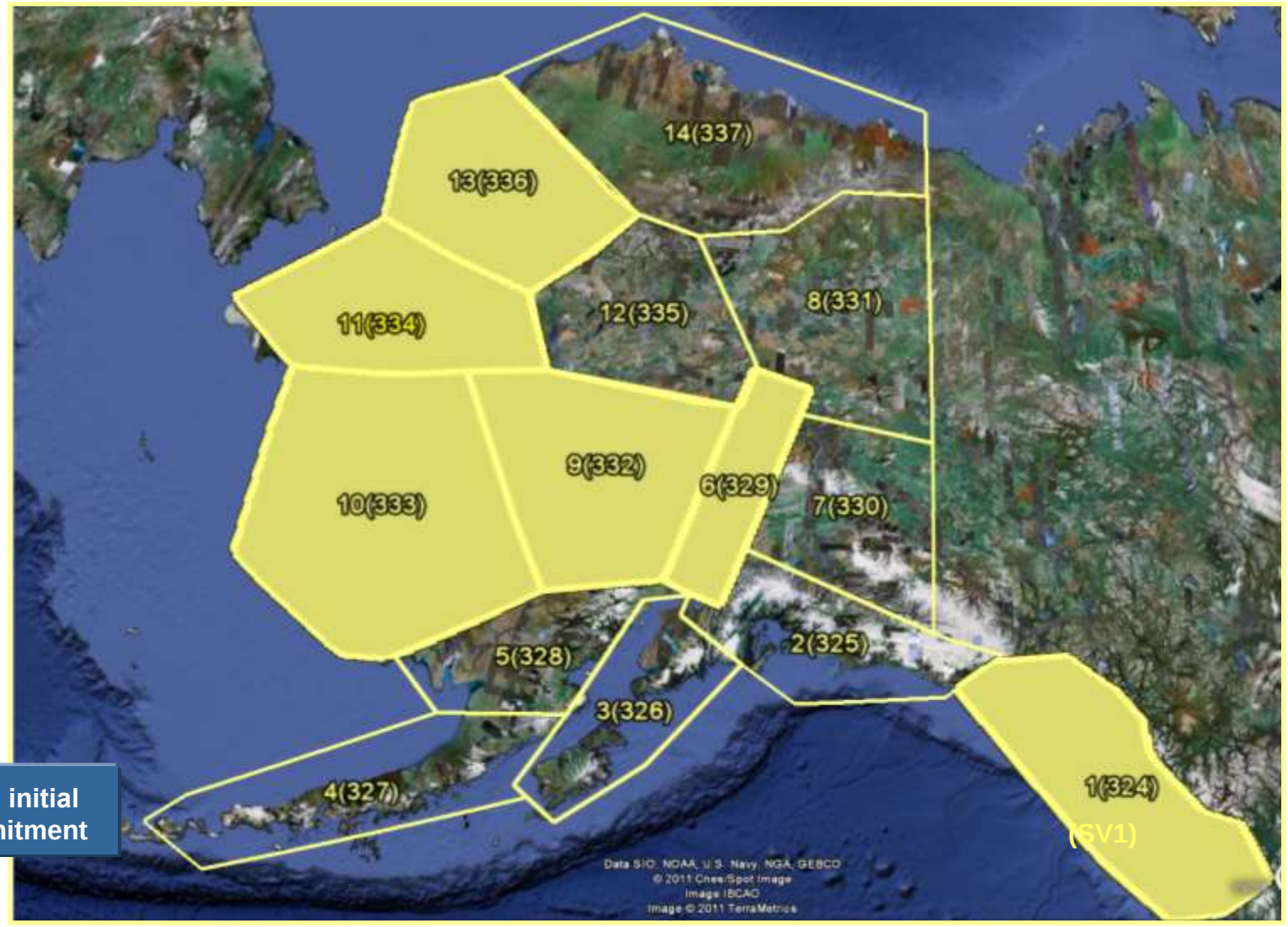
500ft – 3000ft MSL

5000ft + MSL

Note

- This figure depicts one days worth of TIS-B tracks (23rd September 2010)
- TIS-B tracks are derived by fusing ADS-B + Radar information.

Alaska ADS-B Coverage

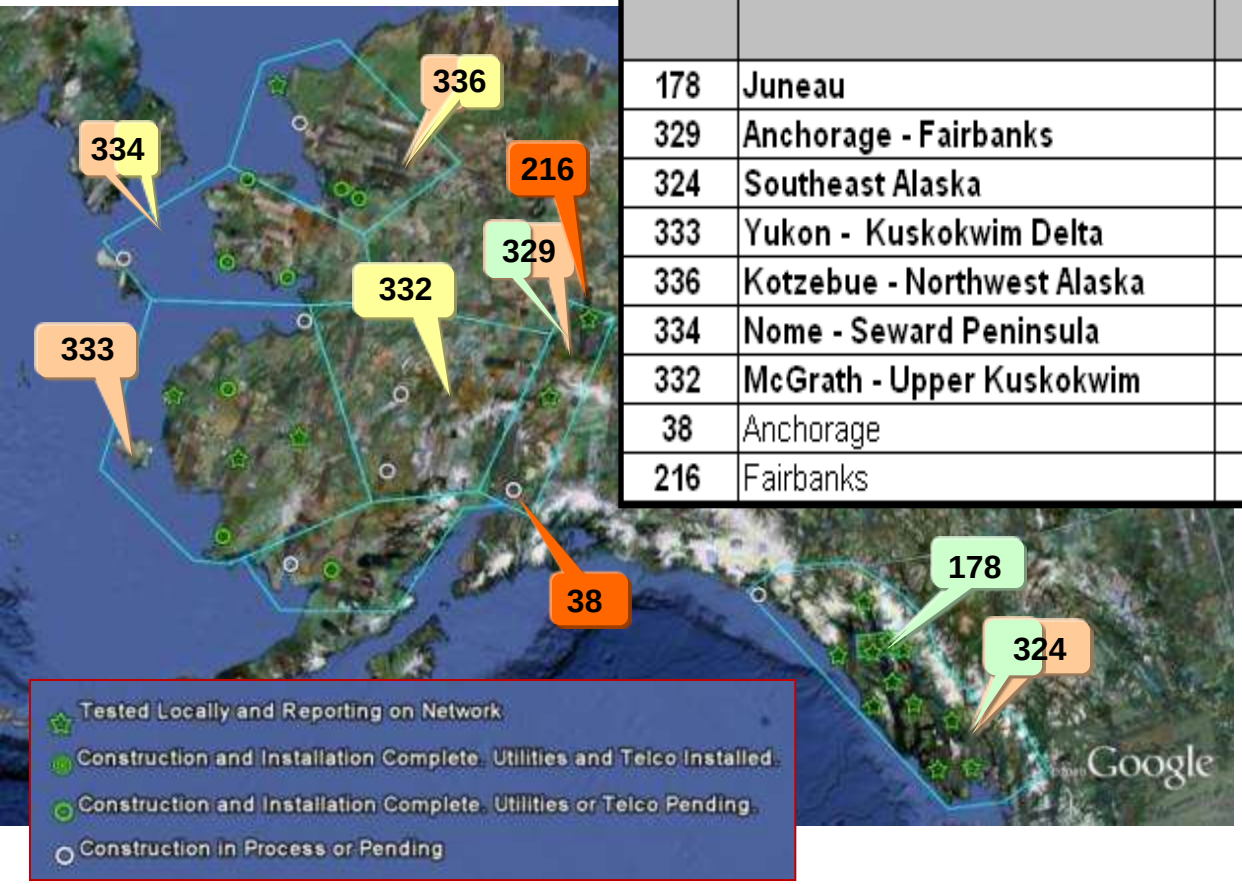


FAA's initial commitment

ADS-B Status – Alaska

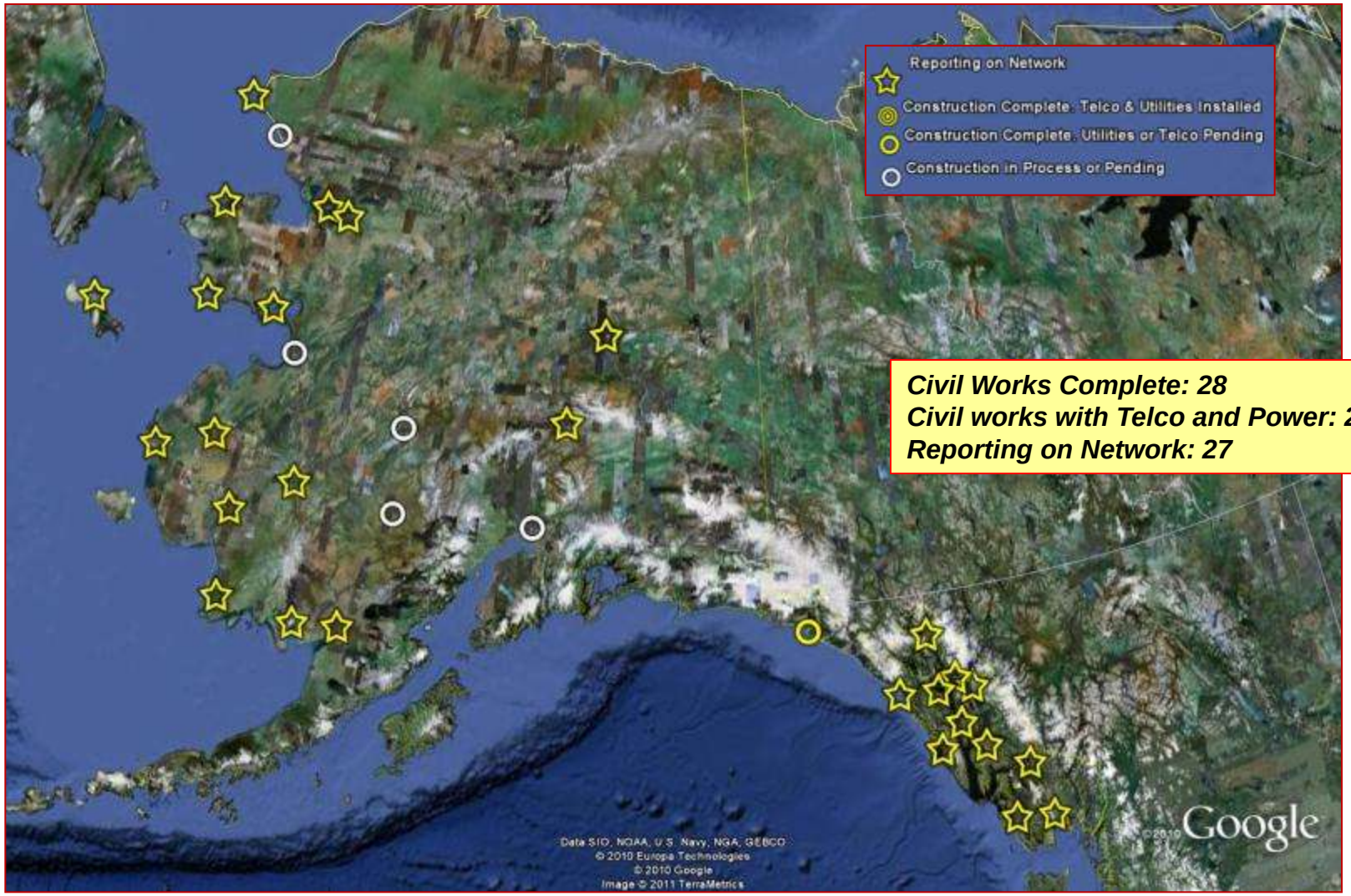
SV 178 IOC with 2 sites. Currently adding a third site- Williams Mtn.

SV	SV Name	SV Type	Essential Initial Operating Capability (IOC)	Critical Initial Operating Capability (IOC)
178	Juneau	En Route	Complete	Complete
329	Anchorage - Fairbanks	En Route	Complete	April 11
324	Southeast Alaska	En Route	Complete	April 11
333	Yukon - Kuskokwim Delta	En Route	Mar-11	Mar-11
336	Kotzebue - Northwest Alaska	En Route	Mar-11	Dec-11
334	Nome - Seward Peninsula	En Route	Mar-11	Dec-11
332	McGrath - Upper Kuskokwim	En Route	Oct-11	Dec-11
38	Anchorage	Terminal	Dec-12	Mar-13
216	Fairbanks	Terminal	Dec-12	TBD



Complete
FY 11 completion
FY 12 completion
FY 13 completion

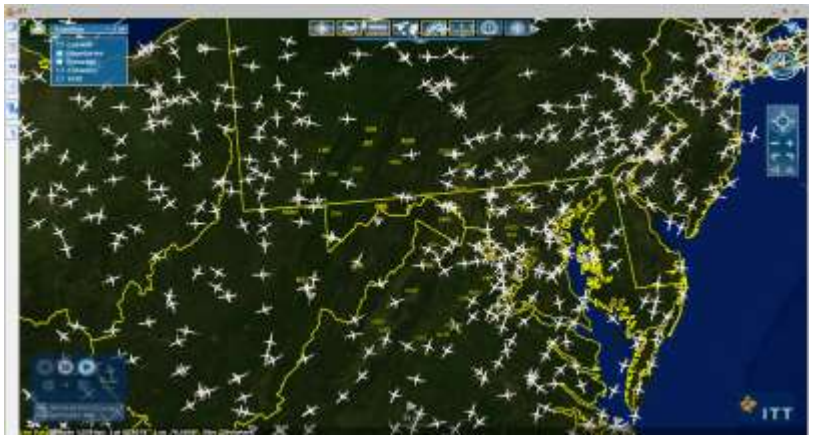
ITT ADS-B Deployment Status – Alaska



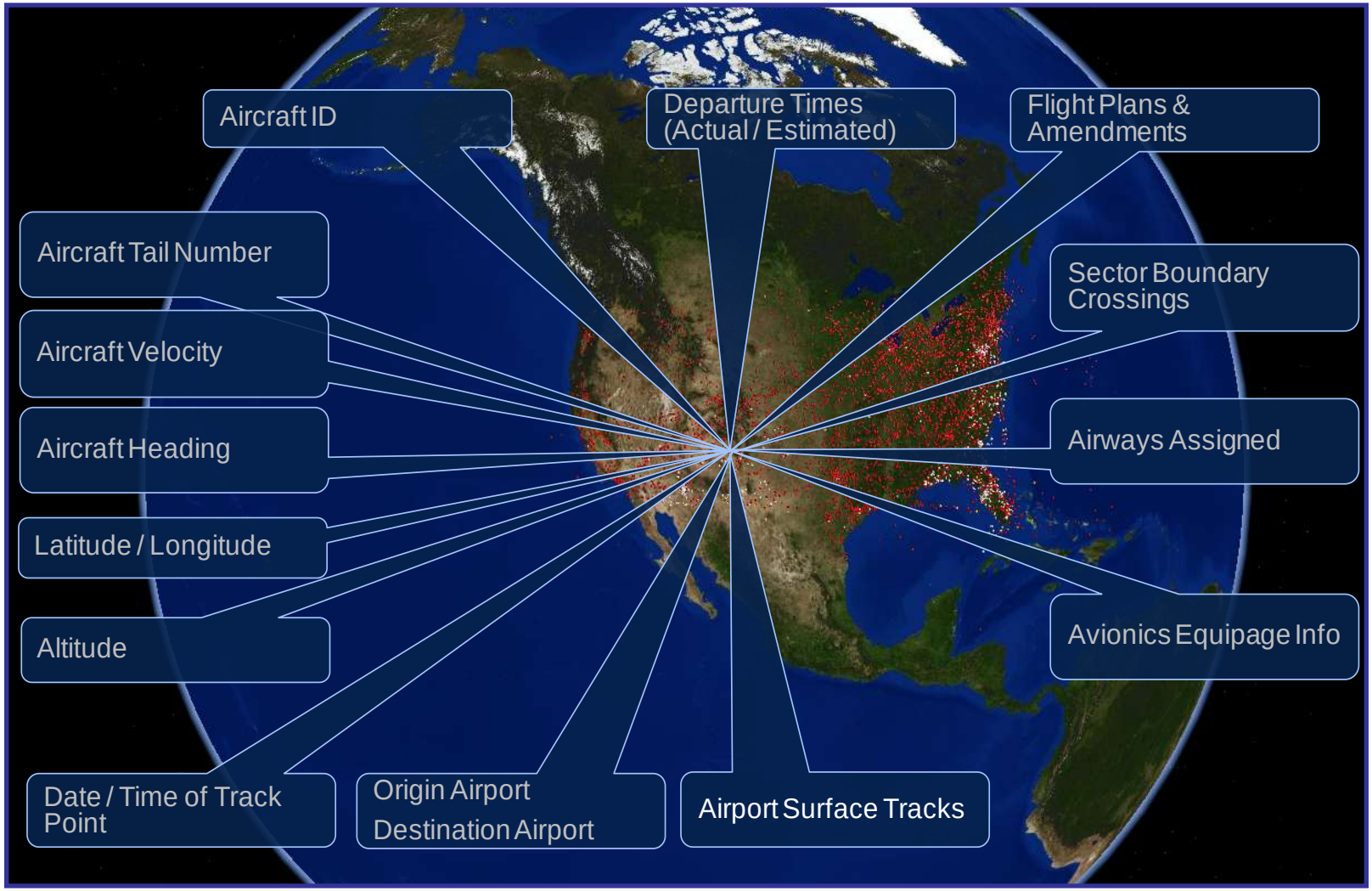
ITT Operator Flight Monitoring Service(OFMS)

OFMS Capabilities

- 2D display with zoom capability
- 3D display with tilt, rotate & zoom
- Black screen, White screen or Satellite view
- Real-time flight tracking
- Flight/fleet information
- Multiple map databases
  - Sectional charts
  - Helicopter charts
  - State lines
  - Road maps
  - Digital terrain w/obstacles
  - Airport Surface maps
  - Navaids, SIDS, STARS, holding patterns
  - Satellite photos
- Ghosting/transparency
- Additional display options
  - Density plots, noise contors, flight track maps
- Weather (future)
  - AWOS Digital
  - Graphical WX overlay (NexRad)
  - Lightning, Icing, Satellite, others?
- Query function by airline, aircraft, tail number
- Playback capability

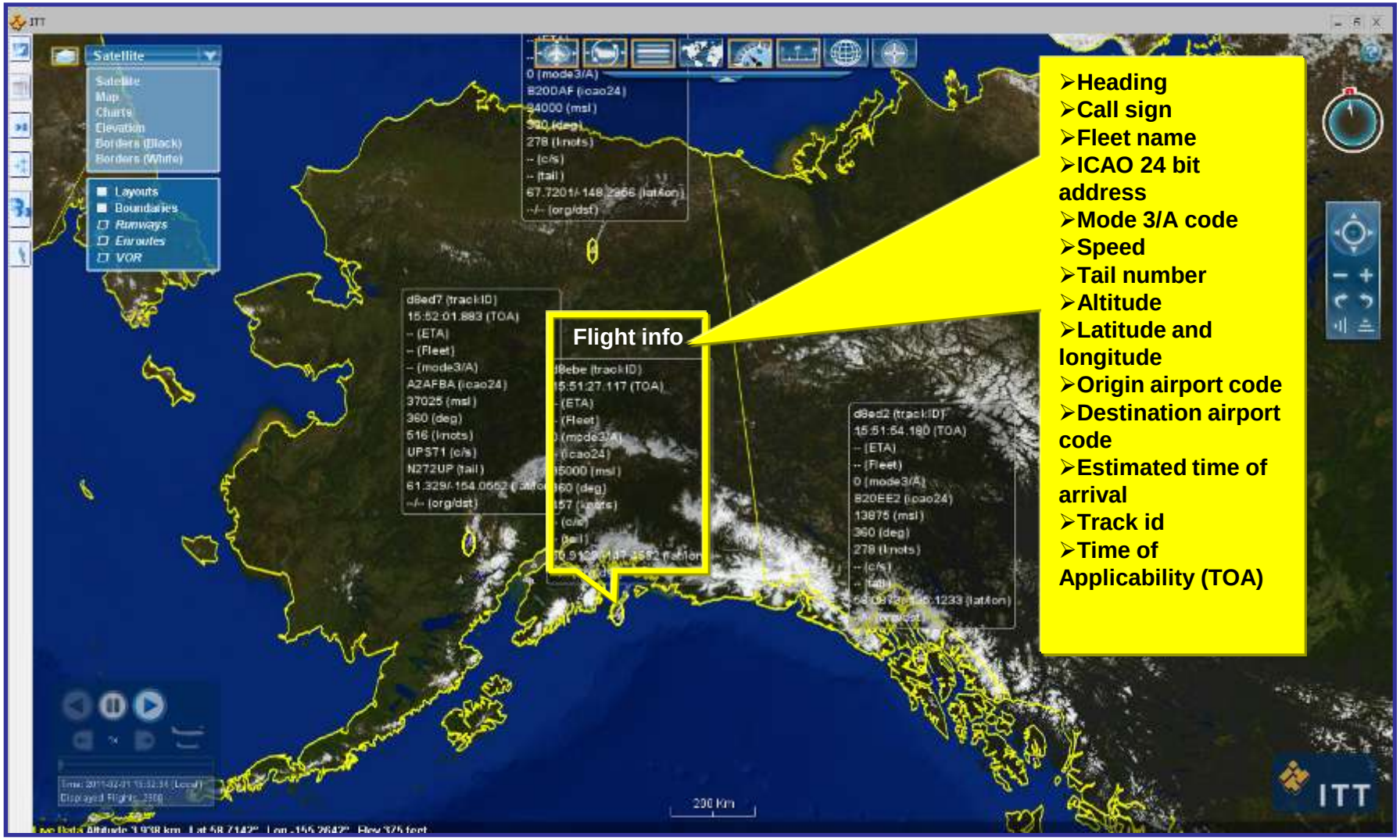


ITT OFMS: Sample of Available Data Elements



ITT OFMS screen shot

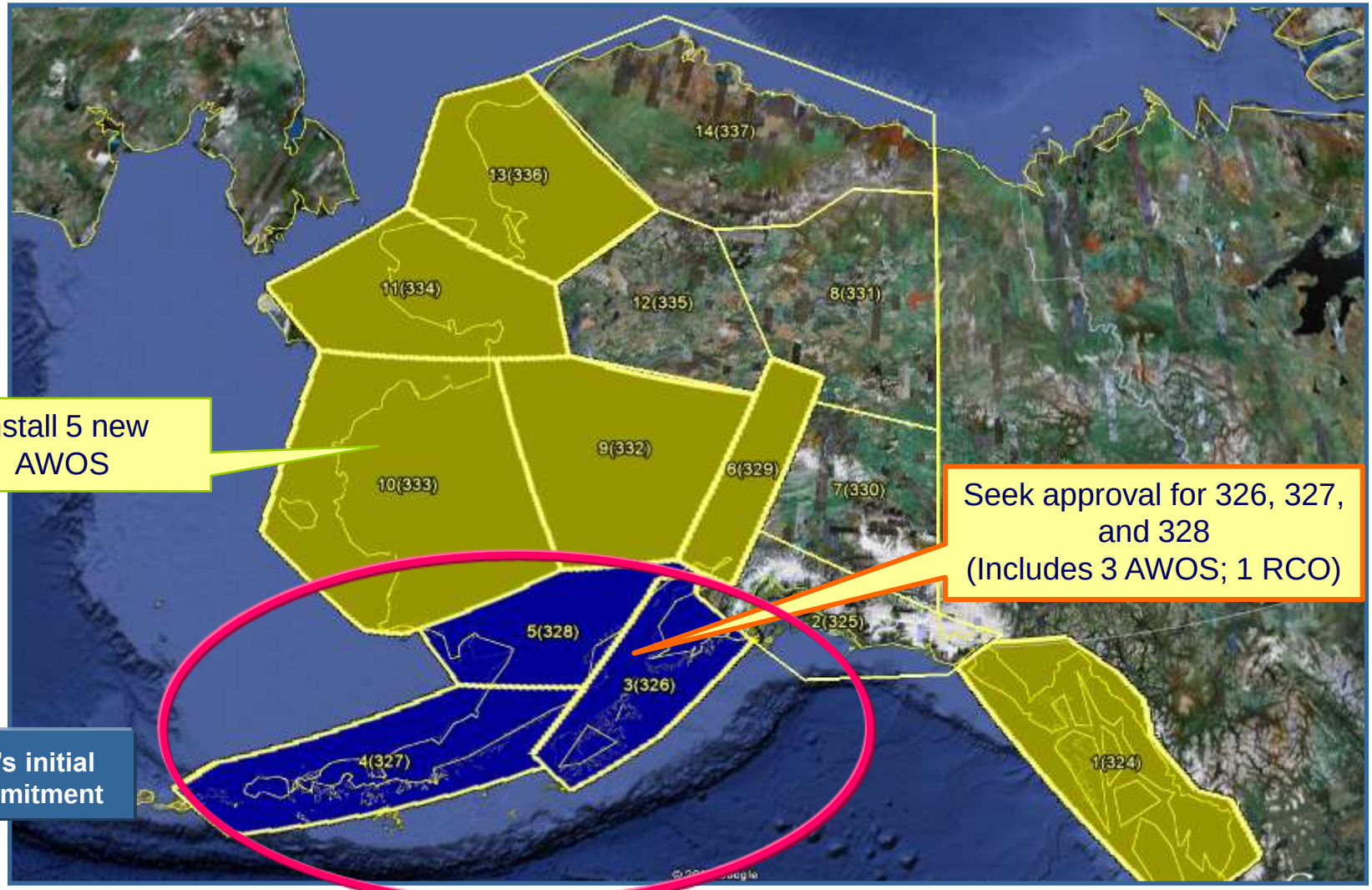
ITT OFMS screen shot



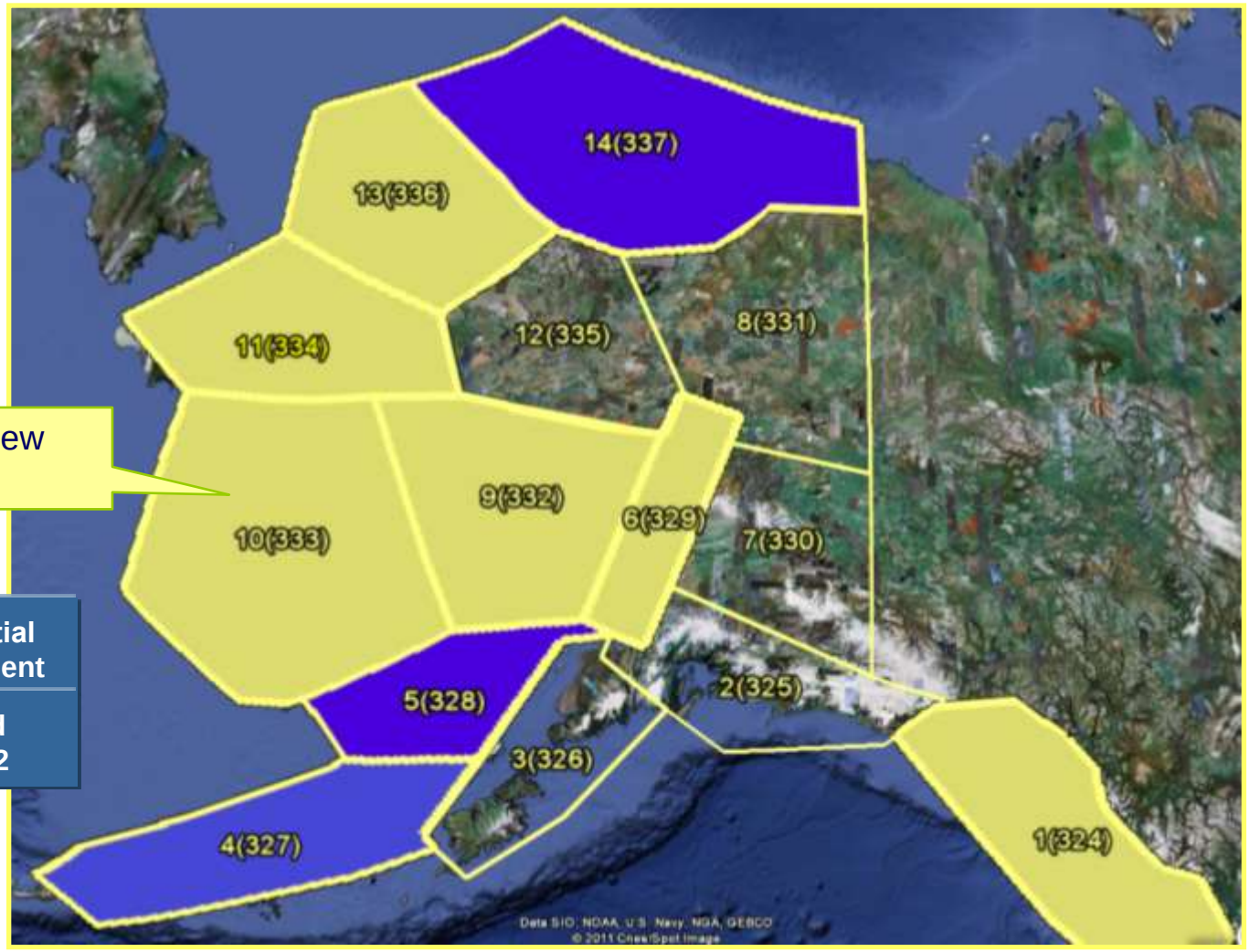
CRABS to ITT OFMS Transition

- **Time frame – Summer 2011**
- **Cost- TBD**
- **Contact – Jimmy Wright**
  - *PH: 907-790-7316*
  - *Email: jim.ctr.wright@faa.gov*

Prior Alaska Business Case Effort
(ADS-B expansion & IFR Airport Upgrade)



New Alaska Business Case Effort
(ADS-B expansion & IFR Airport Upgrade)



Install 5 new AWOS

FAA's initial commitment

Proposed 2011-2012

Next Steps - Alaska

- **Recommend implementing SBS services in 3 additional service volumes (SVs) - 327(4), 328(5), and 337(14). This includes 7 AWOS. *Note: SV 326 (incl Larsen Bay AWOS/RCO) eliminated from the proposal.***

- **Validate actual benefits and recommend installing 5 additional weather services (AWOS) in SV 333(10)**

- **Develop a new AIC plan for the remaining service volumes, including airport upgrades: SV 325(2), 326(3), 330(7), 331(8), 335(12)**

Business Case Milestones	Date
Revise the Alaska business case	October 2010
Coordinate new business case with ATO-F	Ongoing
Present new Alaska strategy to Executive Council	February 2011
JRC Decision	March 2011
AIC Plan Addendum	May 2011

Surveillance & Broadcast Services, WSA

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Alaska Industry Council Update:

WAAS GEO Status

Presented to: Alaska Industry Council

By: JoAnn Y. Ford, Navigation Services

Date: February 9, 2011

Federal Aviation Administration

WAAS GEO Status Update

- **Two WAAS GEOs (AMR and CRE) Currently Operating**
  - Redundant GEO coverage over Contiguous US (CONUS) and Southeast Alaska
- **Status of CRW**
  - CRW ground uplink stations were powered OFF and placed in Maintenance Mode on December 16, 2010 due to instability of CRW Signal in Space
  - On December 23, 2010 CRW responded to Intelsat commanding with telemetry indicating spacecraft autonomous recovery
  - On January 5, 2011 the WAAS navigation transponder on CRW was powered ON for testing purposes
  - FAA began testing with the CRW navigation transponder on January 6, 2011; Testing concluded on January 26, 2011; Test results are acceptable and consistent with pre-failure operation and Signal-in-Space (SIS) performance is deemed acceptable
  - FAA still needs to review satellite provider's (Intelsat) test report on CRW
  - During On-orbit test in January 2011, Lockheed Martin (LM) revealed that the back-up C-L band receiver failed. This is now a single point of failure for the navigation transponder. The WAAS Program Office is currently developing revised estimate for likelihood of failure for this satellite
  - Currently CRW is stationed at 93^{o} W with Intelsat conducting an extensive health check
- **Future CRW Activities**
  - Intelsat plans to begin the westward drift of CRW in mid-February 2011
  - Intelsat will place CRW in an orbital slot at either 133W or 129W, a decision due from Intelsat/LM by February 28, 2011. Both 133W or 129W orbital locations provide full coverage for all of Alaska
  - CRW will provide WAAS coverage of all of Alaska starting Spring 2011
  - WAAS Program Office will move forward with POR satellite acquisition until final determination of utility of CRW is made in Feb 2011

LPV/LP Procedures Published to Date

LPV Procedures

LPVs Published to non-ILS Runways:	**1470**
LPVs Published to ILS Runways:	**896**
Cumulative LPVs Published to Date:	**2,366**
LPVs Published to <250 ft. Decision Altitude (DA):	**432**
LPVs Published to exactly 200 ft. DA:	**421**
(98% of LPVs <250 ft. are to exactly 200 ft.)	
Next publication cycle:	**02/10/11**

LP Procedures

First LP procedure published: **01/13/11**

- Peter O Knight, Tampa, FL (TPF), RNAV (GPS) Rwy 36

***Expected* LP publications:** **03/10/11**

- Macon, GA (MAC) 10/28
- Kalamazoo, MI (AZO) 5/23
- Ardmore Downtown, OK (1F0) 17/35
- Waupaca, WI (PCZ) 28

FAA Actions and Next Steps on Leaded Aviation Gasoline

Federal Aviation Administration

Presented to: FAA-Industry Council

By: August Asay, Manager Anchorage Aircraft Certification Office, Small Airplane Directorate, Federal Aviation Administration

Date: February 9, 2011

Agenda

- **FAA Actions**
  - FAA responsibilities
    - U.S. Code
    - Regulations
    - Participation with industry
  - Research
    - FAA Technical Center
    - Coordinating Research Council (CRC)
    - Funding
  - New fuels
  - Policy & Rulemaking
    - Advisory Circular 20-24C
    - Aviation Rulemaking Committee (ARC)
- **FAA next steps**

FAA responsibilities – U.S. Code

- **FAA has the authority to:**
  - Prescribe minimum safety standards for aircraft and engines (Title 49 U.S.C. § 44701)
  - Issue type certificates to aircraft and engines found to meet the minimum safety requirements, including terms required for safety (Title 49 U.S.C. § 44704)
  - Prescribe fuel standards to control or eliminate emissions that EPA has found to endanger public health or welfare (Title 49 U.S.C. § 44714)

FAA responsibilities – regulations

- **Type Certification**
  - FAA certificates engines and aircraft to **USE** a given fuel(s)
    - Fuel* is specified as part of the application for type certification and used to show compliance with the applicable regulations
    - Fuel* is listed as a type design limitation on the engine and aircraft certificate

    *NOTE: Historically, ASTM and MIL specifications have been used in the U.S.

  - Title 14 Code of Federal Regulations (CFR)
    - Aircraft: parts 23, 25, 27, 29
    - Engines & Propellers: parts 33, 35
    - Fuel venting, emissions, & noise: parts 34, 36

  - 14 CFR § 34.6 Aircraft Safety

- **Operation**
  - The fuel is specified in:
    - Engine Installation Instructions
    - Aircraft Flight Manual
    - Placard next to fuel filler port

FAA responsibilities – participation

- **Voting member of the ASTM Aviation Fuels Subcommittees**
  - Voluntary standards body
  - Consensus based
- **Charter Member of the Coordinating Research Council Aviation Fuels Groups**
  - Octane rating group
  - Unleaded AVGAS development group
- **Conducts independent fuel testing at the FAA William J. Hughes Technical Center**

FAA fuels research

- **High-Level FAA Commitment**
  - FAA Flight Plan
- **Research Funding**
  - Line-Item in FY11 NextGen Budget
  - Supports FAA William J. Hughes Technical Center Research and Testing
- **Research focus**
  - Unleaded fuel performance
  - Engine requirements
  - Test & evaluation methods

New fuels – FAA perspective

New Fuel Evaluation and Spec Development (ASTM or Other)

Current Spec (Drop-in Fuel)

New Spec (Non-Drop-in Fuel)

Unchanged Operating Limitation

New Operating Limitation

FAA Certification

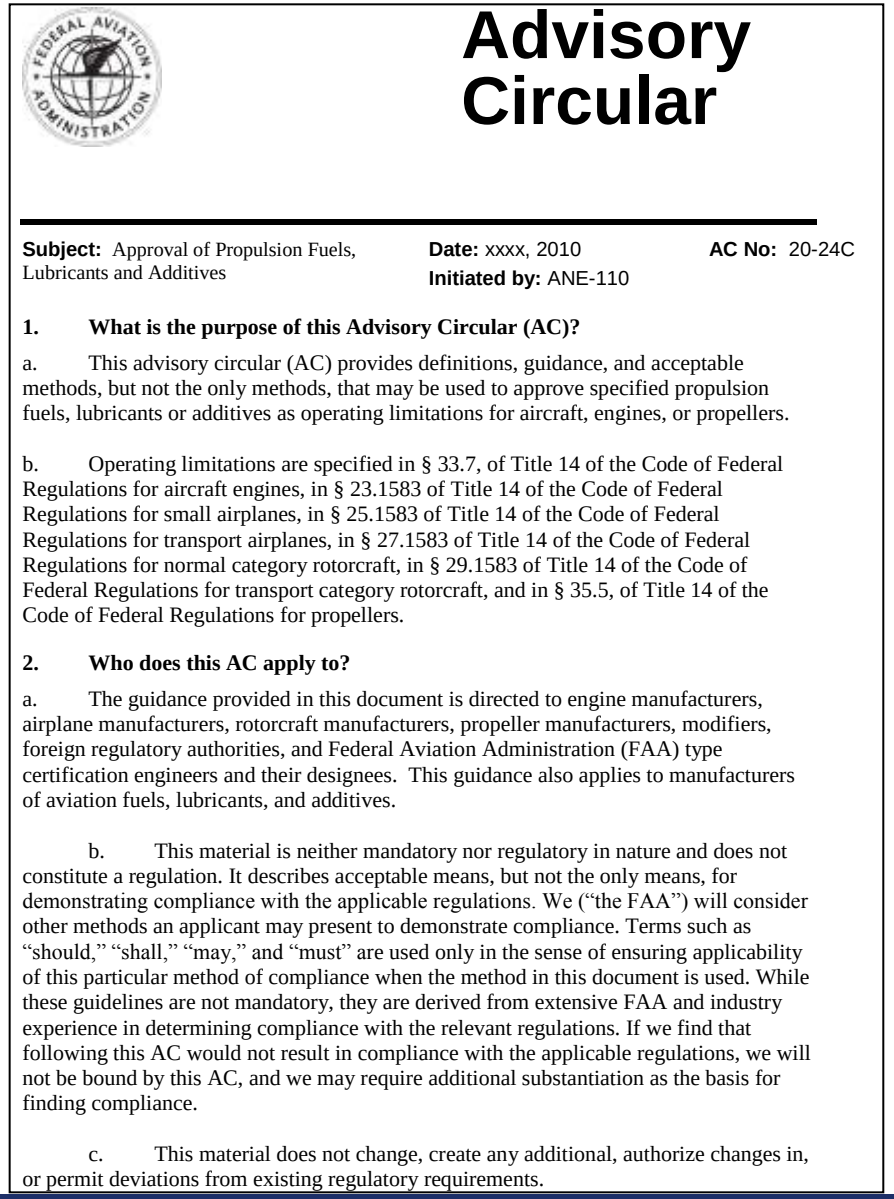
Engine Operating Limitations

Aircraft Operating Limitations

Aircraft Flight Manual

New fuels - policy

- **Draft FAA AC 20-24C**
  - Approval of Propulsion Fuels, Lubricants and Additives
  - Similar Scope to AC 20-24B
  - Expanded to cover aircraft and propellers
- **Guidance for approval of aviation fuels**
- **Draft issued for public comment Oct 2010**
- **Comments under review**
- **Release expected mid-2011**



Advisory Circular

Subject: Approval of Propulsion Fuels, Lubricants and Additives

Date: xxxx, 2010

Initiated by: ANE-110

AC No: 20-24C

1. What is the purpose of this Advisory Circular (AC)?

a. This advisory circular (AC) provides definitions, guidance, and acceptable methods, but not the only methods, that may be used to approve specified propulsion fuels, lubricants or additives as operating limitations for aircraft, engines, or propellers.

b. Operating limitations are specified in § 33.7, of Title 14 of the Code of Federal Regulations for aircraft engines, in § 23.1583 of Title 14 of the Code of Federal Regulations for small airplanes, in § 25.1583 of Title 14 of the Code of Federal Regulations for transport airplanes, in § 27.1583 of Title 14 of the Code of Federal Regulations for normal category rotorcraft, in § 29.1583 of Title 14 of the Code of Federal Regulations for transport category rotorcraft, and in § 35.5, of Title 14 of the Code of Federal Regulations for propellers.

2. Who does this AC apply to?

a. The guidance provided in this document is directed to engine manufacturers, airplane manufacturers, rotorcraft manufacturers, propeller manufacturers, modifiers, foreign regulatory authorities, and Federal Aviation Administration (FAA) type certification engineers and their designees. This guidance also applies to manufacturers of aviation fuels, lubricants, and additives.

b. This material is neither mandatory nor regulatory in nature and does not constitute a regulation. It describes acceptable means, but not the only means, for demonstrating compliance with the applicable regulations. We ("the FAA") will consider other methods an applicant may present to demonstrate compliance. Terms such as "should," "shall," "may," and "must" are used only in the sense of ensuring applicability of this particular method of compliance when the method in this document is used. While these guidelines are not mandatory, they are derived from extensive FAA and industry experience in determining compliance with the relevant regulations. If we find that following this AC would not result in compliance with the applicable regulations, we will not be bound by this AC, and we may require additional substantiation as the basis for finding compliance.

c. This material does not change, create any additional, authorize changes in, or permit deviations from existing regulatory requirements.

Aviation Rulemaking Committee (ARC)

- **FAA Establishing Unleaded Avgas ARC**
  - Take a Fresh, New Look at Issue
  - Form the ARC with FAA-Industry membership
  - Identify Key Issues
  - Develop Plan for Transition to Unleaded Avgas

- **Status**
  - FAA Administrator signed ARC charter on Jan 31, 2011
  - FAA Selects Committee Members
  - First Meeting by End of March
  - Expected duration of 6-12 months

FAA next steps

- **Regulations and Policy**
  - Focus on aviation safety
  - Work with EPA
  - Release AC20-24C
  - Establish and participate on the ARC
- **Stakeholders**
  - Coordinate with GA AVGAS Coalition
  - Support specification of new fuels at ASTM
  - Respond to applications for type certification of engines and aircraft on new fuels
- **Research**
  - Provide independent testing and participate in CRC
  - Conduct research into new fuels and fuel systems